

Systematic radiocarbon dating of human remains from the Late Neolithic collective dolmen burial of Oberbipp (Switzerland)

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Collective megalithic burials of the Late Neolithic are found in the western parts of Europe between Southern Scandinavia and the Iberian Peninsula, however the discovery of undisturbed sites is extremely rare. The dolmen of Oberbipp is one of the few collective megalithic burial sites including human remains in Switzerland. The site therefore provides a unique opportunity for multidisciplinary research. Morphological analysis indicates, that approximately 40 individuals are buried in the grave chamber. It was not possible archaeologically to determine different occupation periods within the inhumations. Since dolmen graves were often reused over hundreds of years, this question could only be addressed with radiocarbon dating.

All the inhumations need to be dated individually. Since the evaluation of different burial sequences depends on precise dating, the same bony element (right *femora*) was analyzed by two (in some cases three) different laboratories. The aim of this systematical radiocarbon dating was therefore threefold: a) determine the total occupation time of the dolmen; b) evaluate the sequence of the burials; c) compare the results of the same skeletal element from different laboratories.

In total 73 radiocarbon dating results from three different laboratories (LARA Bern, CEZA Mannheim and RAU Oxford) of the right *femora* (n=31) are available to approach the question of the chronology of the burials.

The total occupation time of the dolmen was between 3350 and 2650BC. Only the application of systematical radiocarbon dating allowed determining two occupation periods within the burial.

In addition, the comparison between results shows that the dating of the same skeletal element varies little between laboratories, but in several cases, the difference was rather substantial and could have led to a different interpretation of the whole site.

The presentation will highlight the necessity of large serial dating of archaeological inhumations, especially from prehistoric collective burials of the Neolithic.